

Claims

1. A mobile station comprising:
 - a transmit buffer for storing data about a plurality of communication services on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel;
 - an amount-of-data information determining means for monitoring the data which are stored in said transmit buffer on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel so as to determine communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information; and
 - 15 a transmitting means for transmitting the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information determined by said amount-of-data information determining means to a base station.
- 20 2. The mobile station according to Claim 1, characterized in that said amount-of-data information determining means converts the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information into a binary digit number, and outputs the amount-of-data information indicating the binary digit number to the transmitting means.
3. The mobile station according to Claim 1, characterized 30 in that said amount-of-data information determining means

converts the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information into a data occupation ratio of the transmit buffer, and outputs the amount-of-data information indicating the data 5 occupation ratio to the transmitting means.

4. The mobile station according to Claim 1, characterized in that said amount-of-data information determining means converts the communication-service-by-communication-service 10 or transmit-channel-by-transmit-channel amount-of-data information into a time, and outputs the amount-of-data information indicating the time to the transmitting means.

5. The mobile station according to Claim 1, characterized 15 in that said amount-of-data information determining means converts the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information into a transmission rate, and outputs the amount-of-data information indicating the transmission rate to 20 the transmitting means.

6. The mobile station according to Claim 5, characterized in that said amount-of-data information determining means converts the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data 25 information into a number of bits per second or a number of bits per unit time.

7. The mobile station according to Claim 1, characterized 30 in that said amount-of-data information determining means

converts the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information into a channel amplitude coefficient or a channel amplitude coefficient ratio, and outputs the amount-of-data
5 information indicating the channel amplitude coefficient or the channel amplitude coefficient ratio to the transmitting means.

8. The mobile station according to Claim 1, characterized in that said amount-of-data information determining means
10 converts the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information into a power dimension or a power dimension ratio, and outputs the amount-of-data information indicating the power dimension or the power dimension ratio to the transmitting
15 means.

9. The mobile station according to Claim 1, characterized in that said amount-of-data information determining means outputs an index indicating a combination of pieces of
20 communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information to the transmitting means, instead of the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data
25 information.

10. A base station comprising:

a receiving means for receiving
communication-service-by-communication-service or
30 transmit-channel-by-transmit-channel amount-of-data

information from a mobile station;

an assignment determining means for determining assignment of radio resources for data on a communication-service-by-communication-service or
5 transmit-channel-by-transmit-channel basis according to the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information received by said receiving means; and

a notifying means for notifying transmission control
10 information indicating the assignment of radio resources determined by said assignment determining means to said mobile station.

11. A communication system provided with a base station
15 which notifies transmission control information indicating a data transmission timing, and a mobile station which transmits data to said base station according to the transmission control information notified from said base station, characterized in that said mobile station includes:

20 a transmit buffer for storing data about a plurality of communication services on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel;

an amount-of-data information determining means for
25 monitoring the data which are stored in said transmit buffer on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis so as to determine communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data
30 information; and

a transmitting means for transmitting the communication-service-by-communication-service or transmit-channel-by-transmit-channel amount-of-data information determined by said amount-of-data information
5 determining means to said base station,

and characterized in that said base station includes:
a scheduler for assigning resources used for carrying out data transmission to said mobile station on a communication-service-by-communication-service basis or on a
10 transmit-channel-by-transmit-channel basis according to the amount-of-data information received from said mobile station.

12. An amount-of-data information transmission method comprising the steps of:

15 monitoring data which are transmitted from a terminal on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis;

determining amount-of-data information indicating an amount of data on a
20 communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis; and

transmitting the amount-of-data information which is determined on a communication-service-by-communication-service basis or on a
25 transmit-channel-by-transmit-channel basis to a base station.

13. A transmission-control-information notification method comprising the steps of:

when a base station receives amount-of-data information
30 which is determined on a

communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis from a mobile station, determining a data transmission timing on a communication-service-by-communication-service basis or on a 5 transmit-channel-by-transmit-channel basis according to the amount-of-data information; and

notifying transmission control information indicating the data transmission timing to said mobile station.

10 14. A wireless communication method comprising the steps of:

when data about a plurality of communication services are stored in transmit buffers on a communication-service-by-communication-service basis or on a 15 transmit-channel-by-transmit-channel basis, monitoring the data which are stored in the transmit buffers on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis;

determining amount-of-data information indicating an 20 amount of data on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis;

transmitting the amount-of-data information which is determined on a communication-service-by-communication-service basis or on a 25 transmit-channel-by-transmit-channel basis to a base station; when the base station receives the amount-of-data information which is determined on a communication-service-by-communication-service basis or on a 30 transmit-channel-by-transmit-channel basis from a mobile

station, determining a data transmission timing on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis according to the amount-of-data information;

- 5 notifying transmission control information indicating the data transmission timing to said mobile station; and
 said mobile station transmitting the data to said base station on a communication-service-by-communication-service basis or on a transmit-channel-by-transmit-channel basis
10 according to the transmission control information notified from said base station.